What is claimed is:

1. A solid-state image-sensing device comprising:

a photoelectric conversion element for outputting an electric signal proportional to an amount of incident light;

a first transistor connected in series with the photoelectric conversion element and capable of operating in a subthreshold region to convert the electric signal from the photoelectric conversion element into a signal logarithmically proportional to the amount of incident light;

a first switch provided between the photoelectric conversion element and the first transistor to permit the photoelectric conversion element and the first transistor to be connected to and disconnected from each other; and

a second switch for permitting a predetermined direct-current voltage to be fed to a first electrode of the first transistor,

wherein, during image sensing, the first switch is turned on to electrically connect the photoelectric conversion element and the first transistor to each other and in addition the second switch is turned off to disable feeding of the direct-current voltage to the first transistor, and

wherein, with predetermined timing while no image sensing is being performed, the first switch is turned off to electrically disconnect the photoelectric conversion element and the first transistor from each other and in addition the second switch is turned on to enable feeding of the direct-current voltage to the first transistor so that a current higher than during image sensing flows through the first transistor to reset the first transistor.

2. A solid-state image-sensing device as claimed in claim 1, wherein the second switch is a transistor.

3. A solid-state image-sensing device as claimed in claim 2, wherein the second switch is a transistor of an opposite conductivity type to the first transistor.

4. A solid-state image-sensing device as claimed in claim 1, wherein the first switch is a transistor.

5. A solid-state image-sensing device as claimed in claim 1, wherein the photoelectric conversion element, the first transistor, the first switch, and the second switch together constitute a pixel, and a plurality of such pixels are arranged in a matrix.

6. A solid-state image-sensing device comprising:

a plurality of pixels capable of outputting electric signals either in a first mode in which the electric signals are natural-logarithmically proportional to an amount of incident light or in a second mode in which the electric signals are linearly proportional to the amount of incident light; and

a detection circuit for detecting variations in sensitivity among the pixels in each of the first and second modes.

7. A solid-state image-sensing device as claimed in claim 6,

wherein the detection circuit comprises:

a constant-current source; and

a switch for electrically connecting and disconnecting the constant-current source to and from the pixels.

8. A solid-state image-sensing device as claimed in claim 6,

wherein the pixels each comprise:

a photoelectric conversion element for outputting an electric signal proportional to an amount of incident light;

a first transistor connected in series with the photoelectric conversion element; and

a second transistor, having a control electrode thereof connected to a node between the first transistor and the photoelectric conversion element, for outputting the electric signal,

wherein, in the first mode, a first voltage is applied to a control electrode of the first transistor to make the first transistor operate in a subthreshold region, and

wherein, in the second mode, a second voltage is applied to the control electrode of the first transistor to turn the first transistor off.

9. A solid-state image-sensing device as claimed in claim 8,

wherein the detection circuit comprises:

a constant-current source; and

a switch for electrically connecting and disconnecting the constant-current source to and from a node between the first transistor and the photoelectric

conversion element,

wherein, when detecting variations in sensitivity among the pixels in the first mode, the first transistor is made to operate in a subthreshold region and the switch is turned on so that a constant current is fed from the constant-current source through the switch to the first transistor to sample output signals from the pixels, and

wherein, when detecting variations in sensitivity among the pixels in the second mode, the first transistor is turned off and the switch is turned on so that a constant voltage is fed through the constant-current source to the control electrode of the second transistor to initialize the pixels and then sample output signals from the pixels.

10. A solid-state image-sensing device comprising:

a plurality of pixels each comprising:

a photodiode;

a first MOS transistor having a first electrode connected to one electrode of the photodiode;

a second MOS transistor having a first electrode and a gate electrode connected to a second electrode of the first MOS transistor;

a third MOS transistor having a gate electrode connected to the first and gate electrodes of the second MOS transistor; and

a fourth MOS transistor having a first electrode connected to the first and gate electrodes of the second MOS transistor and receiving at a second electrode a direct-current voltage;

wherein, when an image sensing operation is performed in each pixel, the first MOS transistor is turned on and the fourth MOS transistor is turned off so that the second MOS transistor operates in a subthreshold region below a subthreshold level thereof, and

wherein, when a reset operation is performed in each pixel, the first MOS transistor is turned off and the fourth MOS transistor is turned on so that the second MOS transistor permits a current higher than in an image sensing operation to flow therethrough.

11. A solid-state image-sensing device as claimed in claim 10,

wherein the pixels each further include:

a fifth MOS transistor having a first electrode connected to a second electrode of the third MOS transistor, having a second electrode connected to an output signal line, and having a gate electrode connected to a line selection line.

12. A solid-state image-sensing device as claimed in claim 10,

wherein the pixels each further include:

a sixth MOS transistor, receiving at a first electrode a direct-current voltage and having a gate electrode connected to a second electrode of the third MOS transistor, for amplifying an output signal output from the second electrode of the third MOS transistor.

13. A solid-state image-sensing device comprising:

a plurality of pixels each comprising:

a photodiode;

a first MOS transistor having a second electrode connected to one electrode of the photodiode;

a second MOS transistor having a second electrode connected to a first electrode of the first MOS transistor;

a third MOS transistor having a gate electrode connected to the second electrode of the second MOS transistor; and

a fourth MOS transistor having a first electrode connected to the second electrode of the second MOS transistor and receiving at a second electrode a direct-current voltage;

wherein, when an image sensing operation is performed in each pixel, the first MOS transistor is turned on and the fourth MOS transistor is turned off so that the second MOS transistor operates in a subthreshold region below a subthreshold level thereof, and

wherein, when a reset operation is performed in each pixel, the first MOS transistor is turned off and the fourth MOS transistor is turned on so that the second MOS transistor permits a current higher than in an image sensing operation to flow therethrough.

14. A solid-state image-sensing device as claimed in claim 13,

wherein the pixels each further include:

a fifth MOS transistor having a first electrode connected to a second electrode of the third MOS transistor, having a second electrode connected to an output signal line, and having a gate electrode connected to a line selection line.

15. A solid-state image-sensing device as claimed in claim 13, wherein the pixels each further include:

a sixth MOS transistor, receiving at a first electrode a direct-current voltage and having a gate electrode connected to a second electrode of the third MOS transistor, for amplifying an output signal output from the second electrode of the third MOS transistor.

16. A solid-state image-sensing device comprising:

a constant-current source; and

a plurality of pixels, the pixels each comprising:

a photoelectric converter for generating an output signal natural-logarithmically proportional to an amount of incident light; and

a delivery path by way of which the output signal of the photoelectric converter is delivered to an output signal line,

the photoelectric converter comprising:

a photoelectric conversion element receiving at a first electrode a direct-current voltage;

a first transistor, having a first electrode, a second electrode, and a control electrode, the first transistor having the first and control electrodes thereof connected to a second electrode of the photoelectric conversion element and capable of outputting an electric signal;

a connection switcher for connecting the second electrode of the first transistor selectively either to a first direct-current voltage line to apply a direct-

current voltage to the second electrode of the first transistor to make the first transistor operate in a subthreshold region or to the constant-current source to permit a constant current to flow through the fist transistor; and

a first switch for electrically connecting and disconnecting the first and control electrodes of the first transistor to and from a second direct-current voltage line in conjunction with operation of the connection switcher to apply a direct-current voltage, when required, to the first and control electrodes of the first transistor.

17. A solid-state image-sensing device as claimed in claim 16,

wherein the photoelectric converter further comprises:

a second transistor having a first electrode, a second electrode, and a control electrode, the second transistor receiving at the first electrode thereof a direct-current voltage, having the control electrode thereof connected to the first and control electrodes of the first transistor, and outputting at the second electrode thereof an electric signal.

18. A solid-state image-sensing device as claimed in claim 16,

wherein the connection switcher comprises:

a second switch connected between the second electrode of the first transistor and the first direct-current voltage line; and

a third switch connected to the second electrode of the first transistor and to the constant-current source.

19. A solid-state image-sensing device as claimed in claim 16, wherein the photoelectric converter further comprises:

a fourth switch for preventing an electric signal proportional to the amount of incident light that is output from the photoelectric conversion element from flowing into the first transistor.

20. A solid-state image-sensing device comprising:

a constant-current source;

a plurality of pixels, the pixels each comprising:

a photodiode;

a first MOS transistor having a first electrode and a gate electrode connected to a second electrode of the photodiode;

a second MOS transistor having a gate electrode connected to the first and gate electrodes of the first MOS transistor;

a third MOS transistor receiving at a first electrode a direct-current voltage and having a second electrode connected to the first and gate electrodes of the first MOS transistor;

a fourth MOS transistor having a first electrode connected to the second electrode of the first MOS transistor and having a second electrode connected to a direct-current voltage line to which a direct-current voltage that makes the first MOS transistor operate in a threshold region is applied; and

a fifth MOS transistor having a first electrode connected to the second electrode of the first MOS transistor and having a second electrode connected to the constant-current source,

wherein, when an image sensing operation is performed in each pixel, the third and fifth MOS transistors are turned off and the fourth MOS transistor is turned on to make the first MOS transistor operate in a subthreshold region below a subthreshold level thereof so that an electric signal output from the photodiode is converted into a signal natural-logarithmically proportional to an amount of incident light, and

wherein, when a reset operation is performed in each pixel, the third and fifth MOS transistors are turned on and the forth MOS transistor is turned off to permit a constant current to flow through the first MOS transistor so that the gate electrode of the first MOS transistor is reset to a predetermined voltage corresponding to the first MOS transistor.

21. A solid-state image-sensing device as claimed in claim 20,

wherein the pixels each further comprise:

a sixth MOS transistor provided between the photodiode and the first MOS transistor, the sixth MOS transistor having a first electrode connected to the second electrode of the photodiode, and having a second electrode connected to a node between the first and gate electrodes of the first MOS transistor,

wherein, when an image sensing operation is performed in each pixel, the third and fifth MOS transistors are turned off and the fourth and sixth MOS transistors are turned on to make the first MOS transistor operate in a subthreshold region below the subthreshold level thereof so that the electric signal output from the photodiode is converted into a signal natural-logarithmically proportional to the amount of incident light, and

wherein, when a reset operation is performed in each pixel, the third and fifth MOS transistors are turned on and the forth and sixth MOS transistors are turned off to permit a constant current to flow through the first MOS transistor so that the gate electrode of the first MOS transistor is reset to the predetermined voltage corresponding to the first MOS transistor.

22. A solid-state image-sensing device as claimed in claim 20,

wherein the pixels each further comprise:

a sixth MOS transistor receiving at a first electrode a direct-current voltage and having a second electrode connected to the first electrode of the photodiode,

wherein, when an image sensing operation is performed in each pixel, the third and fifth MOS transistors are turned off and the fourth and sixth MOS transistors are turned on to make the first MOS transistor operate in a subthreshold region below the subthreshold level thereof so that the electric signal output from the photodiode is converted into a signal natural-logarithmically proportional to the amount of incident light, and

wherein, when a reset operation is performed in each pixel, the third and fifth MOS transistors are turned on and the forth and sixth MOS transistors are turned off to permit a constant current to flow through the first MOS transistor so that the gate electrode of the first MOS transistor is reset to the predetermined voltage corresponding to the first MOS transistor.